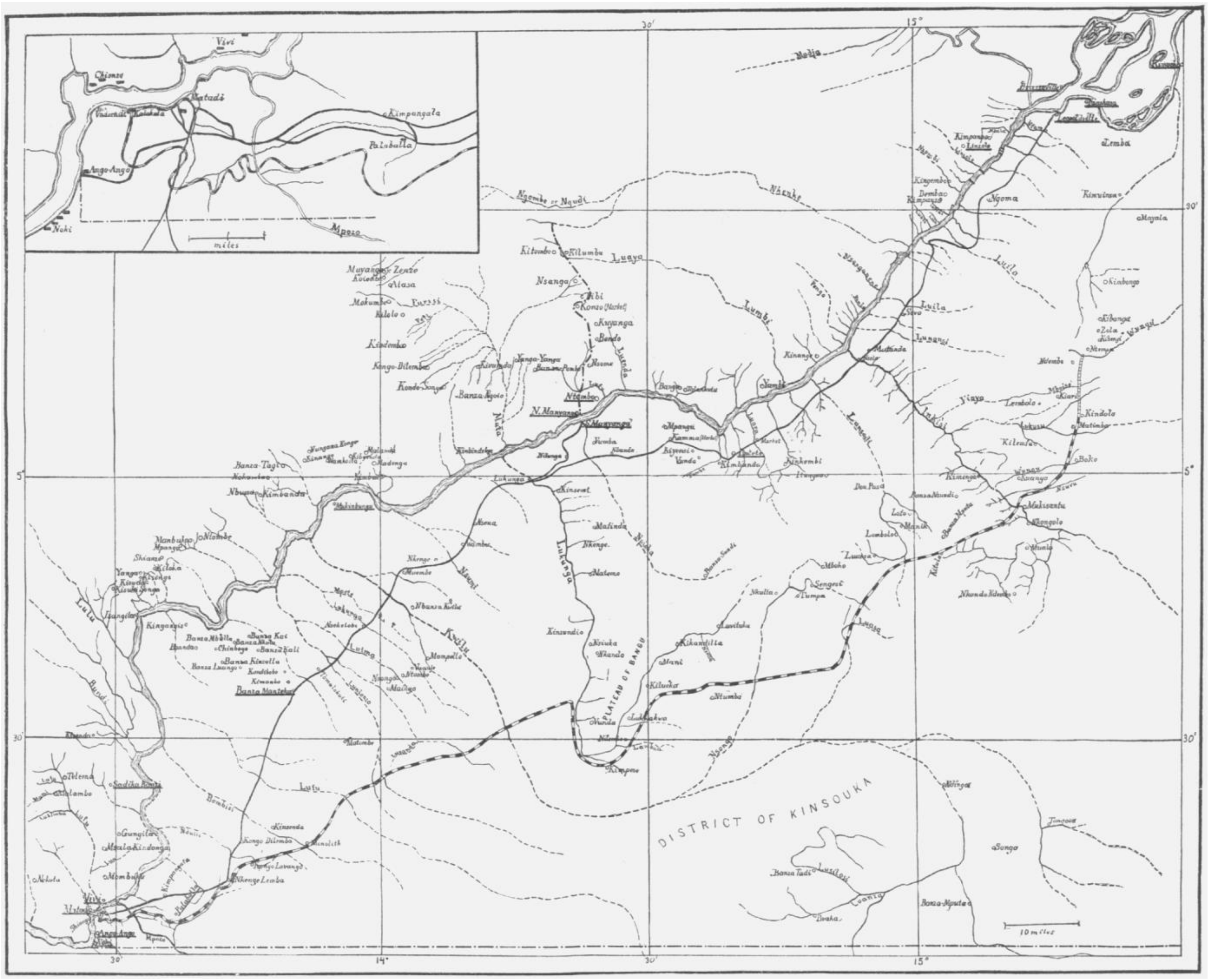
mately parallel to the Kongo, and crosses its affluents near their mouths, the railroad either crosses these rivers near their sources or keeps on the divides between these river systems. Thus the deep gullies and valleys are avoided, gentle slopes prevailing on the plateau. Considerable difficulty was encountered in climbing this highland which falls abruptly to the river. It was found impossible to ascend it by one of the tributaries of the Kongo coming from the south, as they run in inaccessible gorges. But fortunately a depression was found a short distance below Matadi, from which point the projected road ascends the highland. The road will cross the tributary Mpozo on a bridge, and, after having avoided the plateau of Palababa by a *détour* to the south, it takes an east-north-easterly direction, until the river Lukunga is met. It seemed at first that some difficulties would be encountered here; but the reconnaissances of the engineers showed that the valley of the river takes a north-easterly turn, and thus they were enabled to follow its left bank without crossing it. No serious obstacles are encountered between the bend of the Lukunga and the Inkissi, the country consisting of hills intersected by small ravines. Between the line and the Kongo rises the plateau of Ngombi to an altitude of 1,600 feet. This part of the country is intersected by deep valleys. The Inkissi, at the point where the railroad is proposed to cross it, is about 350 feet in width. A number of rocks are found in its bed, which will facilitate the construction of a bridge.

East of the Inkissi the population becomes less numerous, and the country is more elevated and sandy. The heights of the hills are clad in forests, and deep ravines intersect the slopes of the plateaus. Approaching Stanley Pool, the line has to pass over hills about 300 feet above the Kongo, which are traversed through narrow and tortuous valleys. Later surveys show that a better line may be found farther to the west. Although it will be some time before work on this line is taken up, the results of these surveys show that it may be constructed without incurring extraordinary expense. Preliminarily the establishment of a regular connection with the upper Kongo by means of oxen is contemplated.

The commercial reconnaissance of the upper Kongo region, and the tentative establishment of stations by the Belgian Company as well as by the Sandford Exploring Expedition, have encouraged the promoters of these enterprises to take more energetic action. The two companies have recently joined, and formed the Compagnie Belge du Commerce au Congo, with a capital of 1,200,000 francs, which has for its purpose the establishment of regular commerce with the Kongo basin.



PROJECTED RAILROAD FROM MATADI TO STANLEY POOL, KONGO FREE STATE.

HEALTH MATTERS.

The Schoolroom as a Factor in Disease.

A VERY valuable paper on "The Schoolroom as a Factor in the Production of Disease" was read by Dr. J. A. Larrabee of Louisville, Ky., at the last meeting of the American Medical Association, and is reported in full in the *Journal*. Estimating that one-third the lifetime of every educated person is passed in the schoolroom, it follows that the location, construction, and surroundings of the same are matters of importance. While there has been great advance in these respects, much still remains to be done. In Switzerland the summits of small hills are selected as school-sites.

Schoolhouses should be built in parks, and every thing possible done to make them attractive both outside and within. Ventilation is a matter of prime importance. Among the diseases caused or favored by schools, he places the following: contagious diseases, headaches, eye affections, chorea, and consumption.

This paper was discussed by several of the members of the association. Dr. Lindsley of Tennessee said that there were two points which he wished to emphasize: 1. Medical men must arouse public attention to the necessity for paid medical inspectors. 2. No text-books of hygiene should be put in the schools, because the masses do not get this education. The majority of children leave the schools before reaching the higher classes where this subject is taught. Hygiene should be impressed upon them by every feature of their environment.

Dr. Hibberd of Indiana agreed with Dr. Lindsley in the utter impossibility of teaching children in primary schools enough physiology to be of utility. There are many who are grandfathers who do not know what it is absolutely necessary to teach. Teach youth to observe, and what things they should observe. The trustees of schools understand the necessity for air, light, etc., but they cannot get the money to provide them. Every schoolhouse in the land should be situated so as to face the best direction of the compass, having air and light in abundance; but it will cost a great deal of money.

We must recognize that all children are not exactly alike in their capacity for receiving education; and the present methods are faulty in teaching all children on the same plan. Due regard must be paid to mental and physical variations, and sound minds and bodies cannot be had until this is recognized.

Dr. Hamilton, United States Marine Hospital Service, said that the reason that the majority of German children were myopic was due to the employment of the old black letter. German medical text-books are printed in Roman letters, but for political reasons the black letters are generally used. He believed in the necessity for school-inspectors; and the first thing they should do would be to examine the text-books, the paper of which is often inferior, and the printing but little better. Another feature demanding improvement is the sitting arrangement of a schoolroom. All know the country schoolroom, with its four rows of desks, and windows on either side of the room, which imperfectly light the middle rows of desks.

Dr. Vaughan of Michigan did not believe that all defects in eyesight in school-children are attributable to the schoolroom. If one enters any family room at night, the father and mother will be found sitting on either side of a table on which the light is, and the children are allowed to sit anywhere. More harm is done young girls by sitting up late at night at parties and dances than by all the alleged confinement in the schoolroom. Dr. Larrabee did not refer to the stairs, which are usually selected as one of the fertile sources of disease in young girls; but if one watches a woman go upstairs, she does it with her body bent forward, and swinging from side to side, instead of going upstairs erect. The German method of the climbing cure might be employed advantageously in some of these cases. In Michigan most children are better situated at the schoolhouse than at home; farmhouses, as a rule, from a sanitary point of view, being far from good. The ignorance of teachers on hygienic matters seems to me to be the primary evil.

Dr. Hibberd believed, with Dr. Vaughan, that the fundamental education should be with the teacher. But the architect must also be remembered. This gentleman usually puts his efforts on the adornment of the exterior of the building, and the interior is suited to this. One cannot get architects to give sufficient attention to the interior of these buildings, because it is their aim to produce handsome work.

Dr. Vaughan stated that the plans for school-buildings in Michigan must be approved by the State Board of Health.

ELECTRIC LIGHT AND EYES. — In the *Medical News*, Dr. George M. Gould discusses the question, "Is the electric light injurious to the eyes?" Before proceeding to the direct answer of this question, he refers to the relation of the electric light to general hygiene. Most every one, he says, has a general impression that the electric light is much superior to other methods of artificial illumination, so far as concerns our general health and comfort, but few could give a reason for the faith that is in them. They will come out of a theatre, music-hall, church, etc., with headaches, lassitude, exhaustion, their bodies bathed in sweat, all resulting in colds and a multitude of major and minor affections, and never utter a word of protest or complaint against the culpable and parsimonious management that permits the vitiation, poisoning, and superheating of the atmosphere by a thousand gas-jets. In the discussion of the question as to the injury to the eyes by the use of the electric light, Dr. Gould refers at length to the literature of the subject, and sums up the whole matter in the following conclusions: 1. As regards general hygiene, the superiority of the electric light over gas as an artificial illuminant is so overwhelming as to admit of no discussion. It is incontestably the light of the future, and the public should not rest until its meeting-places, such as theatres, halls, reading-rooms, churches, etc., are lighted by the most perfect system at its command. 2. A study of the published cases of injury of the eyes by the electric light shows that not one was due to the use of the diffused light as an illuminant. The popular prejudice against such a use of it is absolutely without justification. All the cases reported were of scientific investigators, etc., or workmen about the light, who approached it very closely, gazed at it protractedly, and without protecting colored spectacles. 3. The ocular injury is due, not to the supposed preponderance in the electric-light rays of violet and ultra-violet (chemical or actinic) waves, but simply to the greater number (intensity) of the usual length light-waves. 4. The symptoms of the ocular injury are possibly immediate temporary "retinal paralysis," blepharospasm, central scotomata, chromatopsia, after-images, etc. Within twenty-four hours there come on intense photophobia, lachrymation, ocular pain, a feeling as of foreign bodies beneath the lids, conjunctival hyperæmia and congestion, pericorneal circles, etc. 5. The attack usually lasts but two or three days; the prognosis is excellent; the treatment is simply cocaine and atropine instillations and cold or hot compresses. 6. Workmen and experimenters who must approach closely to the electric light should protect their eyes by smoked or tinted glasses, the depth of the tint being greater where the light is more brilliant, the proximity greater, or the exposure longer. In the welding-works the workmen must be particularly careful about this, and must also not expose the skin of the face, neck, and hands to the action of the light. The precaution may not be amiss to advise the curious against testing their eyes by gazing at the ordinary arc and glow lights at short range.

ELECTRICAL NEWS.

The Electric Sugar-Refining Process.

IN the last week the daily press, and the stockholders of the company organized to develop the electrical refining of sugar, have learned that the process does not exist, and that a gigantic fraud has been perpetrated. It is just to remark that many of the electro-technical papers have denounced the scheme from the first. With the Keely motor, it demonstrates the fact, that, by making large enough promises, a clever adventurer can get a great many people to advance money to promote the most impossible plans. There are few people who will not risk a few hundreds, or even thousands, on the promise of making a million in a short time. The refining process in question was secret from the first. Elaborate precautions were taken to avoid publicity, — a fact that should have at once aroused the suspicion of investors. A large sum of money ($250,000 to $350,000) was given the alleged inventor for the purpose of equipping a factory; and a few bags of raw sugar, taken to the works and submitted to the process, apparently came out as refined sugar. In reality this was effected in an extremely simple manner, by substituting previously provided refined sugar for the raw in the secret "electrical" chambers. The whole matter illustrates forcibly what we recently said about electrical investments, that while there are such investments which will give better returns than in almost any other industry, yet, like any thing else that is new and not well understood, it has been and still is the means by which a great deal of money has been obtained from trusting investors, from which there will never be any return.

THE ELECTRIC LIGHT IN LAND WARFARE. — The London *Electrician* describes the following experiments made on Hamp-